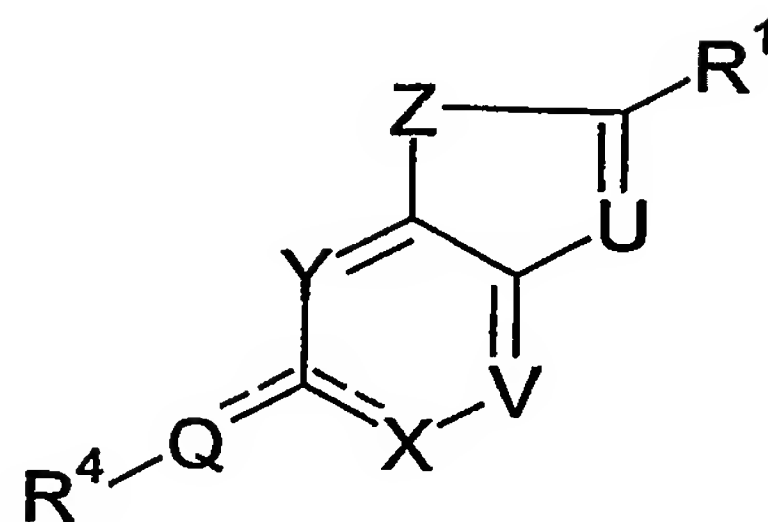


## CLAIMS

1. A chemical compound having the formula (I):



5 wherein:

$R^1$  and  $R^4$  are independently selected from alkyl, aryl, alkenyl and alkynyl;

10 Z is selected from O, NH, S, Se,  $NR^5$  and  $(CH_2)_n$  where n is 1 to 10, and  $CT_2$  where T may be the same or different and is selected from hydrogen, alkyl and halogens, and  $R^5$  is alkyl, alkenyl or aryl;

Y is selected from N, CH and  $CR^6$  where  $R^6$  is alkyl, alkenyl, alkynyl or aryl;

15 Q is selected from O, S, NH, N-alkyl,  $CH_2$ , CHalkyl and  $C(alkyl)_2$ ;

U is selected from N and  $CR^2$ ,  $R^2$  is selected from hydrogen, alkyl, halogen, amino, alkylamino, dialkylamino, nitro, cyano, alkoxy, aryloxy, thiol, alkylthiol, arylthiol and aryl;

20

V is selected from N and  $CR^3$ , where  $R^3$  is selected from hydrogen, alkyl, halogens, alkyloxy, aryloxy and aryl; and

25 when a double bond exists between X and the ring atom to which Q is attached and Q is linked to the ring moiety by a single bond, X is selected from N, CH and  $CR^7$ , where  $R^7$  is selected from alkyl, alkenyl, alkynyl and aryl; and

- when a double bond links Q to the ring moiety and a single bond exists between X and the ring atom to which Q is attached, R<sup>4</sup> does not exist and X is NR<sup>8</sup>, where R<sup>8</sup> is alkyl, alkenyl, alkynyl or aryl, except that when Y is N, R<sup>8</sup> is not an alkyl or alkenyl group substituted at the fourth atom of the chain of said alkyl or alkenyl group, counted along the shortest route away from the ring moiety including any heteroatom present in said chain, by a member selected from OH, phosphate, diphosphate, triphosphate, phosphonate, diphosphonate, triphosphonate and pharmacologically acceptable salts, derivatives and prodrugs thereof;
- 10 and pharmacologically acceptable salts, derivatives and prodrugs of compounds of formula I.
2. A compound according to claim 1 wherein when a double bond exists between X and the ring atom to which Q is attached, X and Y are both N.
- 15 3. A compound according to claim 1 or claim 2 wherein when a double bond exists between X and the ring atom to which Q is attached, Z is O or NH, preferably O.
4. A compound according to any one of claims 1 to 3 wherein when a double bond exists between X and the ring atom to which Q is attached, Q is O.
- 20 5. A compound according to claim 1 wherein X and Y are N, Q and Z are independently selected from O, S and NH, and preferably both Q and Z are O.
- 25 6. A compound according to any one of claims 1 to 5 wherein each of U and V is CH.
7. A compound according to any one of claims 1 to 6 wherein R<sup>1</sup> is selected from C<sub>3-20</sub>alkyl, C<sub>3-20</sub>cycloalkyl, C<sub>3-20</sub>alkenyl, C<sub>3-20</sub>alkynyl, C<sub>5-14</sub>aryl and C<sub>1-10</sub>alkylC<sub>5-14</sub>aryl, preferably C<sub>3-14</sub>alkyl, C<sub>3-14</sub>alkenyl and C<sub>3-14</sub>alkynyl, more preferably C<sub>8-10</sub>alkyl, C<sub>8-10</sub>alkenyl and C<sub>8-10</sub>alkynyl.
- 30 8. A compound according to claim 7 wherein R<sup>1</sup> is unbranched and unsubstituted C<sub>3-12</sub>alkyl, preferably C<sub>6-10</sub>alkyl.

9. A compound according to anyone of claims 1 to 7 wherein each of  $R^4$  and  $R^8$  is selected from  $C_{1-12}$ alkyl,  $C_{1-12}$ alkenyl,  $C_{1-12}$ alkynyl,  $C_{3-12}$ cycloalkyl,  $C_{1-6}$ alkyl substituted with  $C_{3-7}$ cycloalkyl,  $C_{1-3}$ alkyl,  $C_{5-14}$ aryl and  $C_{3-6}$ cycloalkyl and  $C_{5-14}$ aryl containing 1, 2, 3 or 4 hetero ring atoms independently selected from O, N and S, preferably  $R^4$  and  $R^8$  are selected from  $C_{1-10}$ alkyl,  $C_{1-10}$ alkenyl and  $C_{1-10}$ alkynyl.
10. A compound according to any one of claims 1 to 8 wherein  $R^1$  is  $C_{3-14}$  alkyl,  $C_{3-14}$  alkenyl or  $C_{3-14}$  alkynyl, preferably  $C_{6-14}$  alkyl,  $C_{6-14}$  alkenyl or  $C_{6-14}$  alkynyl, and  $R^4$  and  $R^8$  are selected from  $C_{1-12}$  alkyl,  $C_{3-10}$  cycloalkyl,  $C_{1-6}$  alkyl substituted with  $C_{3-7}$  cycloalkyl, preferably  $C_{5-6}$  alkyl or  $C_{5-6}$  cycloalkyl.
11. A compound according to one of claims 1 to 9 wherein  $R^1$  is  $C_{10}$  alkyl.
12. A compound according to any one of claims 1 to 11 wherein  $R^4$  and  $R^8$  are selected from benzyl or substituted benzyl.
13. A compound according to any one of claims 1 to 10 wherein  $R^4$  and  $R^8$  are  $C_1$  alkyl substituted with  $C_{1-10}$  cycloalkyl, preferably  $C_1$  alkyl substituted with  $C_{5-6}$  cycloalkyl.
14. A compound according to claim 1 wherein X and Y are both N, U and V are both CH, Z and Q are independently selected from O, S and NH, and each of  $R^1$ ,  $R^4$  and  $R^8$  are  $C_{8-12}$  alkyl.
15. A compound selected from the group comprising:
- 6-Butyl-3-cyclopentyl-3*H*-furo[2,3-*d*]pyrimidin-2-one (139) [Cf2158]
- 6-Butyl-2-cyclopentyloxy-furo[2,3-*d*]pyrimidine (130) [Cf2159]
- 6-Heptyl-3-cyclopentyl-3*H*-furo[2,3-*d*]pyrimidin-2-one (140) [Cf2160]
- 6-Heptyl-2-cyclopentyloxy-furo[2,3-*d*]pyrimidine (141) [Cf2161]
- 6-Butyl-3-(1-ethyl-propyl)-3*H*-furo[2,3-*d*]pyrimidin-2-one (142) [Cf2194]
- 6-Butyl-2-(1-ethyl-propoxy)-furo[2,3-*d*]pyrimidine (143) [Cf2193]

- 6-Heptyl-3-(1-ethyl-propyl)-3*H*-furo[2,3-*d*]pyrimidin-2-one (144) [Cf2190]
- 6-Heptyl-2-(1-ethyl-propoxy)-furo[2,3-*d*]pyrimidine (145) [Cf2189]
- 6-Butyl-3-pentyl-3*H*-furo[2,3-*d*]pyrimidin-2-one (146) [Cf2195]
- 6-Butyl-2-pentyloxy-furo[2,3-*d*]pyrimidine (147) [Cf2327]
- 5 6-Heptyl-3-pentyl-3*H*-furo[2,3-*d*]pyrimidin-2-one (148) [Cf2192]
- 6-Heptyl-3-pentyloxy-3*H*-furo[2,3-*d*]pyrimidin-2-one (149) [Cf2191]
- 6-Heptyl-3-(tetrahydro-furan-2-yl)-3*H*-furo[2,3-*d*]pyrimidin-2-one (154) [Cf2196]
- 6-Decyl-2-propoxy-furo[2,3-*d*]pyrimidine Cf2303
- 6-Decyl-3-propyl-3*H*-furo[2,3-*d*]pyrimidin-2-one Cf2304
- 10 2-Butoxy-6-decyl-furo[2,3-*d*]pyrimidine Cf2305
- 3-Butyl-6-decyl-3*H*-furo[2,3-*d*]pyrimidin-2-one Cf2306
- 6-Decyl-2-pentyloxy-2,3-dihydrofuro[2,3-*d*]pyrimidine Cf2247
- 2-Cyclopentyloxy-6-decyl-2,3-dihydrofuro[2,3-*d*]pyrimidine Cf2250
- 3-Cyclopentyl-6-decyl-2,3-dihydrofuro[2,3-*d*]pyrimidin-2-one Cf2251
- 15 2-(1'-Ethyl-propyloxy)-6-decyl-2,3-dihydrofuro[2,3-*d*]pyrimidine Cf2252
- 3-(1'-Ethyl-propyl)-6-decyl-2,3-dihydrofuro[2,3-*d*]pyrimidin-2-one Cf2253
- 2-Cyclohexyloxy-6-decyl-2,3-dihydrofuro[2,3-*d*]pyrimidine Cf2294
- 3-Cyclohexyl-6-decyl-2,3-dihydrofuro[2,3-*d*]pyrimidin-2-one Cf2295
- 6-Decyl-3-(tetrahydro-furan-2-ylmethyl)-3*H*-furo[2,3-*d*]pyrimidin-2-one 72
- 20 Cf2309
- 2-Cyclohexylmethoxy-6-decyl-furo[2,3-*d*]pyrimidine Cf2274

- 3-Cyclohexylmethyl-6-decyl-3*H*-furo[2,3-*d*]pyrimidin-2-one Cf2275
- 2-Benzyloxy-6-decyl-furo[2,3-*d*]pyrimidine Cf2307
- 3-Benzyl-6-decyl-3*H*-furo[2,3-*d*]pyrimidin-2-one Cf2308
- 6-Decyl-3-(tetrahydro-furan-2'-yl)-2,3-dihydrofuro[2,3-*d*]pyrimidin-2-one  
5 Cf2249
- 6-Decyl-2-(tetrahydro-furan-3-yloxy)-furo[2,3-*d*]pyrimidine 58
- 6-Decyl-3-(tetrahydro-furan-3-yl)-3*H*-furo[2,3-*d*]pyrimidin-2-one Cf2276
- 6-Decyl-2-(tetrahydro-furan-2-ylmethoxy)-furo[2,3-*d*]pyrimidine 71
- 6-Decyl-3-(tetrahydro-furan-2-ylmethyl)-3*H*-furo[2,3-*d*]pyrimidin-2-one 72
- 10 6-Decyl-2-(tetrahydro-pyran-2-ylmethoxy)-furo[2,3-*d*]pyrimidine 61
- 6-Decyl-3-(tetrahydro-pyran-2-ylmethyl)-3*H*-furo[2,3-*d*]pyrimidin-2-one 62
- 6-Decyl-2-(4-methoxybenzyloxy)-3*H*-furo[2,3-*d*]pyrimidine Cf2315
- 6-Decyl-3-(4-methoxybenzyl)-3*H*-furo[2,3-*d*]pyrimidin-2-one Cf2316
- 6-Decyl-2-(4-methylbenzyloxy)-3*H*-furo[2,3-*d*]pyrimidine Cf2313
- 15 6-Decyl-3-(4-methylbenzyl)-3*H*-furo[2,3-*d*]pyrimidin-2-one Cf2314
- 6-Hexyl-3-methyl-3*H*-furo[2,3-*d*]pyrimidin-2-one Cf2344
- 2-Butyloxy-6-hexyl-furo[2,3-*d*]pyrimidine Cf2346
- 2-Benzyloxy-6-hexyl-furo[2,3-*d*]pyrimidine Cf2348
- 3-Benzyl-6-hexyl-3*H*-furo[2,3-*d*]pyrimidin-2-one Cf2349.
- 20 16. A method for preparing compounds according to any one of claims 1 to 15 wherein a 5-halo nucleoside analogue is contacted with a terminal alkyne in the presence of a catalyst, or a 5-alkynyl nucleoside is cyclised in the presence of a catalyst.

17. A compound according to any one of claims 1 to 15 for use in a method of treatment.
18. Use of a compound according to any one of claims 1 to 15 in the manufacture of a medicament for the prophylaxis or treatment of viral infection.
- 5 19. Use according to claim 18 wherein the viral infection is a cytomegalovirus viral infection.
20. A method of prophylaxis or treatment of viral infection comprising administration to a patient in need of such treatment an effective dose of a compound according to any of claims 1 to 15.
- 10 21. A method according to claim 20 wherein the viral infection is a cytomegalovirus viral infection.
22. A compound according to any one of claims 1 to 15 in the manufacture of a medicament for use in the prophylaxis or treatment of a viral infection.
- 15 23. A compound according to claim 22 wherein the viral infection is a cytomegalovirus viral infection.
24. A pharmaceutical composition comprising a compound according to any one of claims 1 to 15 in combination with a pharmaceutically acceptable excipient.
- 20 25. A method of preparing a pharmaceutical composition comprising the step of combining a compound according to any one of claims 1 to 15 with a pharmaceutically acceptable excipient.